

**CENTRAL AND SOUTHERN FLORIDA PROJECT  
MODIFIED WATER DELIVERIES TO  
EVERGLADES NATIONAL PARK, FLORIDA**

**8.5 SQUARE MILE AREA**

**SUPPLEMENTAL ENVIRONMENTAL  
IMPACT STATEMENT**

**404(b)(1) EVALUATION REPORT**

**ATTACHMENT C**

**DEPARTMENT OF THE ARMY  
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS  
JACKSONVILLE, FLORIDA**

**July 2000**



**SECTION 404(b) (1) EVALUATION REPORT  
FINAL SUPPLEMENT TO THE ENVIRONMENTAL IMPACT STATEMENT  
8.5 SQUARE MILE AREA**

**PROJECT DESCRIPTION**

- A. **Location.** The discharge of dredged material will take place within the 8.5 SMA or the C-111 buffer area.
- B. **General Description.** In the 8.5 SMA, a perimeter levee will be constructed to allow for increased water levels within the adjacent ENP. A seepage canal some distance interior to the perimeter levee will be constructed. Interior levees on either side of the seepage canal will be constructed to eliminate surface water flow to the seepage canal. A pump station will be constructed at the southern terminus of the seepage canal with Richmond Drive (SW 168<sup>th</sup> Street). This pump station will discharge seepage water into a pipeline that will convey the water south into the C-111 buffer area. A treatment system will be constructed at the southern end of the pipeline that will allow seepage water to be treated for water quality and infiltrate into the subsurface aquifer.
- C. **Authority and Purpose.** The Everglades National Park Protection and Expansion Act authorized the Secretary of the Army, upon completion of a GDM, to modify the C&SF project to improve water deliveries to the ENP and to take steps to restore natural hydrologic conditions in the ENP. The purpose of this project is to facilitate the restoration of the natural hydrology within Northeast Shark River Slough while meeting the needs of the landowners in the 8.5 SMA.
- D. **General Description of the Dredged or Fill Material.**
- (1) General Characteristics of Material. The fill material is dredged and blasted material that will be taken in situ consisting of varying proportions of marl, peat, and oolite rock.
  - (2) Quantity of Material. The quantity of material expected to be removed and placed for this project is summarized in the table below.

**Estimate of Wetlands Dredge and Fill  
for Construction of Alternative 6D**

Plan Feature	Acres		Cubic Yards	
	Dredge	Fill	Dredge	Fill
Perimeter Levee	0.0	107.2	0.0	297,013
Interior Levee and Seepage Canal	5.88	5.58	122,183	21,621
Treatment Area	0.0	6.90	0.0	0.0

- (3) Source of Material. The fill material will be obtained in situ from the blasting and removal of material for the seepage canal.

**E. Description of Proposed Discharge Sites**

- (1) Location. The location of fill will include the perimeter and interior levees that are to be constructed within the 8.5 SMA. (See EIS Figure 3H.) Additionally, excess material will be used within the C-111 buffer area to the south of the 8.5 SMA to create a treatment area. The precise location of the treatment area will be developed during the final design efforts.
- (2) Size. The size of the fill areas is shown in the Table for d.(2) above.
- (3) Type of Site. The placement of the perimeter levee will occur within 107.2 acres of forested exotic, forested native, graminoid, herbaceous and shrubby wetlands. The interior levee placement and the canal dredging will take place in 22.9 acres of forested exotic and herbaceous wetlands and upland forest/shrub complex. The proposed water treatment area supports agricultural land uses and is essentially void of wetland features.
- (4) Type(s) of Habitat. Wetland habitats occur on site and are generally limited to graminoid wetland, non-native and native, forested communities. Nuisance and exotic vegetation within these habitats, including Brazilian pepper, Australian pine, and melaleuca are, are common in these habitats.
- (5) Timing and Duration of Discharge. During the years 2001 through 2003.

- F. **Description of Disposal Method.** Surface material including peat, marl and loose oolite rock will be removed using appropriate methods. Blasting of the limestone substrate will be used to form the seepage canal. Blasted and removed material will be crushed to prepare it for disposal as material for the perimeter and interior levees within the 8.5 SMA as well as the treatment area levees within the C-111 buffer area.

G. **Factual Determinations**

a. Physical Substrate Determinations

- (1) Substrate Elevation and Slope. The existing substrate is at elevations between 5 and 8 feet NGVD. Slope is generally very flat.
- (2) Sediment Type. The sediment is either marl or peat and is essentially identical to the substrate at the fill or adjacent areas.
- (3) Dredge/fill Material Movement. Once placed, the dredge material will not move.
- (4) Physical Effects on Benthos. No aquatic systems will be affected, therefore no benthic organisms will be affected.
- (5) Other Effects. None
- (6) Actions Taken to Minimize Impacts. The construction of the levees and seepage canal is an integral part of the overall ENP environmental restoration. Project dimensions are the minimum required to achieve the overall restoration objectives. Levee slopes will be stabilized to control erosion and sedimentation.

b. Water Circulation, Fluctuation and Salinity Determinations

- (1) Water. Objective of the project is to restore the natural hydrology within the ENP.
- (2) Current Patterns and Circulation. Not applicable. Existing wetlands are too shallow to show a circulation. Water movement is by sheet flow, except in man-made canals.

- (3) Normal Water Level Fluctuations. The purpose of the project is to allow for historic (natural) levels within the ENP to be restored.
- (4) Salinity Gradients. Not applicable
- (5) Actions That Will Be Taken to Minimize Impacts. The construction of the levees and canal and the placement of fill are part of the overall ENP environmental restoration efforts. Project dimensions are the minimum required to achieve restoration objectives. Levee slopes will be stabilized to control erosion and sedimentation. To the extent practicable, slight adjustments in levee alignment will be considered during design that will further minimize impacts to wetlands.

c. Suspended Particulate/Turbidity Determinations

- (1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site(s). Not applicable
- (2) Effects of Chemical and Physical Properties of the Water Column. Not applicable
  - (a) Light Penetration. Not applicable
  - (b) Dissolved Oxygen. Not applicable
  - (c) Toxic Metals and Organics. The placement of fill is not expected to impact water column with regard to toxic metals or organics.
  - (d) Pathogens. Not applicable
  - (e) Aesthetics. Not applicable
- (3) Effects on Biota
  - (a) Primary Production and Photosynthesis. Where deposit of fill will occur over shallow wetlands, periphyton will be completely covered and photosynthesis will stop.
  - (b) Suspension/Filter Feeders. Not applicable

- (c) Sight Feeders. Those that are highly motile such as fish and reptiles would relocate to avoid the fill. Other, slow moving forms would be buried by the fill.
  - (4) Action Taken to Minimize Impacts. Blasting required to construct the canal will be conducted at times and under conditions that will not influence the nesting period of potentially sensitive species.
- d. Contamination Determination. No contamination will be introduced from the fill material since it is all of in situ origin.
- e. Effects on Aquatic Ecosystem and Organism Determinations.
  - (1) Plankton. Not Applicable
  - (2) Benthos. Not Applicable
  - (3) Nekton. Not Applicable
  - (4) Aquatic Foodweb. Not Applicable
  - (5) Special Aquatic Sites. Not Applicable
    - (a) Sanctuaries and Refuges. The project will further the overall restoration of the Everglades National Park
    - (b) Wetlands. Wetlands within the ENP will be restored.
    - (c) Mud Flats. Not applicable
    - (d) Vegetated Shallows. Vegetated shallows within the ENP will be restored.
    - (e) Coral Reefs. Not applicable.
    - (f) Riffle and Pool Complexes. Not Applicable
  - (6) Threatened and Endangered Species. The proposed fill will have no adverse effects on any listed species. A Biological Assessment has been prepared and included in Attachment A of the SEIS. Coordination with the USFWS has been initiated.
  - (7) Other Wildlife. Habitat within the ENP will be restored.

- (8) Actions Taken to Minimize Impacts. Fill is a required part of the ENP environmental restoration, providing the control for increased water levels within the park. Project dimensions have been minimized to the level necessary to achieve restoration objectives. Levee slopes will be stabilized to control erosion and sedimentation.
- f. Proposed Disposal Site Determinations
  - (1) Mixing Zone Determination. Not applicable
  - (2) Determination of Compliance with Applicable Water Quality Standards.
  - (3) Potential Effects on Human Use Characteristics
    - (a) Municipal and Private Water Supplies. There are no municipal water supplies located near the project area. Private water supplies are located in close proximity with the levee areas. However, the placement of fill materials will not have an impact on these resources.
    - (b) Recreational and Commercial Fisheries. There would be no adverse effect on recreational fisheries. There is no commercial fishing in the area.
    - (c) Water-Related Recreation. It is not anticipated that construction of the facilities proposed will impact water-related recreation. Fishing opportunities in the seepage canal may evolve.
    - (d) Aesthetics. There will be a short-term decline in aesthetic values during construction of the berms. The perimeter levee will only be about 4-feet in height. Therefore, it is not expected to significantly alter the vista.
    - (e) Parks, National and Historic Monuments, National Wilderness Areas, Research Sites, and Similar Preserves. The fill placement will aid in the natural restoration of the ENP.
- g. Determination of Cumulative Effects on the Aquatic Ecosystem. The proposed placement of fill within the 8.5 SMA will allow for improvement of the overall hydrology of the ENP. The fill will allow

the implementation of the MWD project and result in the improvement in the ecological function of the aquatic ecosystem.

- h. Determination of Secondary Effects on the Aquatic System. The fill placed within the 8.5 SMA will result in the improvement of the ecological function of the aquatic ecosystems.

**H. Findings of Compliance with the Restriction on Discharge.**

- a. No significant adaptations of the guidelines were made relative to this evaluation.
- b. No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the United States. Without excavation in wetland, water-control structures and canals could not be built, and consequently, water movement could not be changed. Without fill for levees, redirection of flows through the NESRS and necessary flood mitigation could not be provided at a practical cost.
- c. The discharge of fill materials will not cause or contribute to, after consideration of disposal site dilution and dispersion, violations of any applicable State water quality standards for Outstanding Waters of National Significance or Class III waters.
- d. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.
- e. The placement of fill material will not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any Critical Habitat as specified by the Endangered Species Act of 1973, as amended.
- f. The placement of fill materials will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, and shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity; productivity and stability; and recreational, aesthetic, and economic values will not occur.



- g. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.
- h. On the basis of the guidelines, the proposed disposal sites for the discharge of dredged or fill material are specified as complying with the requirements of these guidelines.